VARIABLE FLUIDIC WAVEGUIDE ATTENUATOR

ABSTRACT

A waveguide attenuator apparatus (100) includes a variable waveguide attenuator (102) having at least one waveguide attenuator cavity (109) and a fluidic dielectric (108) having a loss tangent, a permittivity and a permeability at least partially disposed within the waveguide attenuator cavity. At least one composition processor (101) is included and adapted for dynamically changing a composition or volume of the fluidic dielectric to vary the loss tangent, the permittivity and/or the permeability. A controller (136) is provided for controlling the composition processor to selectively vary the loss tangent, the permittivity and/or the permeability in response to a waveguide attenuator control signal (137). In one arrangement, the permittivity and permeability can be varied concurrently.